

Remarks

Favorable reconsideration of this application is requested in view of the above amendments and in light of the following remarks and discussion.

Claims 1-21 are pending in the application. Claims 1, 5 and 20 are amended in a non-narrowing manner to remedy potential informalities, and new dependent claim 21 is added. Support for the changes to the claims is self-evident from the originally filed disclosure, including the original claims, and therefore no new matter is added.

In the Office Action claims 1-17 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,447,385 to Swars in view of U.S. Patent No. 5,987,973 to Fujii et al. (Fujii). Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Swars in view of Fujii, and further in view of U.S. Patent No. 4,512,441 to Cooper. It is requested that the rejections of the claims be withdrawn, and the claims allowed, for the following reasons.

The present invention, as set forth in independent claim 1, is directed to a camshaft for an engine. The independent claim recites that the camshaft includes a support shaft carrying in a region of one end thereof a camshaft element for co-rotation therewith. The camshaft element is captured on the support shaft by a head of a rivet formed from plastic deformation of the end of the support shaft.

The claimed invention can provide numerous advantages. By way of specific non-limiting examples, camshaft production costs are reduced because the end of the support shaft secures the camshaft element to the support shaft. In particular, because the end of the support shaft itself is the head of the rivet, no welding or separate mechanical fastener is required to capture the camshaft element on the support shaft.

Swars is directed to the connection of a design element on a hollow shaft. However, it is submitted that Swars does not disclose or render obvious the claimed structural features of an end of a support shaft being a head of a rivet, which captures a camshaft element on the support shaft.

Initially, it is submitted that each of the figures of Swars depicts that the design element 1 does not directly contact the shaft 2 to which the design element 1 is connected. Rather, Swars depicts in Figures 3 and 4, and describes throughout the specification, including column 4, lines 6-37, that separate, abrasively acting particles 5 are used to connect the design element 1 to the shaft 2. Specifically, in Swars the abrasively acting particles 5 penetrate both the design element 1 and the shaft 2 when the design element 1 is expanded outwardly and plastically deformed. Thus, contrary to the claimed features of a camshaft element captured on a support shaft by an end of the support shaft, as recited in independent claim 1, the design element 1 is not captured on the shaft 2 by the shaft 2 itself in Swars. Rather, a number of additional, separate mechanical fasteners (i.e., the abrasively acting particles 5) are required to form the connection between the design element 1 and the shaft 2. Thus, Swars does not provide the above-discussed advantages, in which the claimed camshaft element can be captured on the claimed support shaft without using separate mechanical fasteners.

Further, it is submitted that the claimed "head of a rivet" is understood by one of ordinary skill in the art to include a head portion of an end of the support shaft, the head portion having a diameter larger than a hole in the camshaft element, such that removal of the camshaft element from the end of the support shaft is precluded by interference between the head portion and the camshaft element. For these reasons, it is submitted that the connection disclosed in Swars, which does not include any head portion having a diameter larger than a hole formed through the design element 1, does not anticipate or render obvious the claimed

features of a camshaft element captured by a head of a rivet, as recited in independent claim

1. Rather, as discussed above, Swars illustrates that the diameter of the shaft 2 is smaller than the diameter of the hole of the design element 1.

Although the Office Action relies on Fujii to remedy the deficiencies of Swars, it is submitted that Fujii also does not disclose or render obvious, and the Office Action does not assert that Fujii discloses or renders obvious, the claimed features of an end of a support shaft being a head of a rivet, which captures a camshaft element on the support shaft.

For these reasons it is requested that the rejection of independent claim 1 be withdrawn, and the allowance of independent claim 1 is requested.

Independent claims 15 and 20 are allowable for reasons similar to those discussed above with respect to independent claim 1. The allowance of independent claims 15 and 20 is therefore requested.

Claims 2-14, 16-19 and 21 are allowable for the same reasons as independent claims 1 and 15 from which they depend, as well as for their own features. The allowance of dependent claims 2-14, 16-19 and 21 is requested.

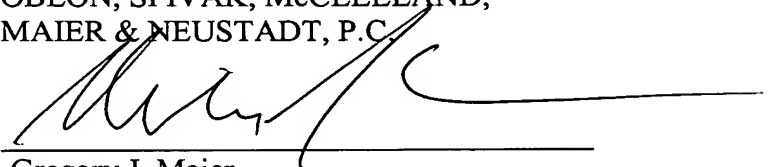
Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Application No. 10/815,844
Reply to Office Action of January 30, 2006

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

Philip J. Hoffmann
Registration No. 46,340

I:\ATTY\PH\25s\250962\PROPOSED AMENDMENT.DOC